

MULTIPLE TRANSMITTER UNITS AND BASES

DESCRIPTION

1. GENERAL

1.01 This section gives the description of multiple transmitter units and bases. A complete multiple transmitter consists of three multiple transmitter units (three message transmitter units or combinations of message transmitter units and numbering transmitter units) and a motor unit mounted on a base. The tape used in these multiple transmitter units may be prepared locally on keyboard perforators or may be prepared from signals received from other stations.

1.02 Because of the number of units and bases now available, it is not desirable to code complete multiple transmitters. Instead, they are obtainable by selecting the desired multiple transmitter units and the proper multiple transmitter base.

2. MULTIPLE TRANSMITTER UNIT

A. Message Transmitter (MXD)

2.01 The message transmitter unit consists essentially of the following mechanism: a 5-unit code transmitting camsleeve with associated transmitting contacts, a tape-feed and a tape-sensing mechanism, a hinged tape lid, an automatic tape-out control feature, a manual tape-out control mechanism, a magnet-operated clutch, a driven gear, and a transmitting contacts filter. The transmitting camsleeve is normally held stationary because the clutch members on the transmitting shaft are held disengaged by a clutch throwout lever. When the clutch magnet is energized, the clutch member engages and the rotation of the transmitting camsleeve begins the cycle of operation.

2.02 The transfer of the code combination from the perforated tape to the contact levers which control the transmitting contacts is accomplished by means of the selector-lever bail, its cam, selecting pins, and selecting levers. The selector levers are positioned, through the medium of the perforations in the tape, to correspond with each signal element to be transmitted. As the cams rotate, the elements are

transmitted in succession. A start-stop cam controls a contact lever which in turn actuates the start-stop contacts. The start-stop contacts open at the beginning of each revolution of the camsleeve to transmit the start element, remain open during the transmission of the five elements, and then close again sending the stop element to the line.

2.03 The unit has a tape-out sensing lever which operates with the other five selector levers with the associated sensing pins. This "sixth pin" is in line with and adjacent to the sensing pin for the No. 1 selector lever but has a larger sensing area. During transmission the sixth pin is prevented from rising fully by the tape but when the end of the tape passes, this pin can rise fully permitting a contact to open which automatically stops operation of the transmitter unit.

2.04 There are contacts which are controlled manually by depressing the release bar. The operation of the release bar performs three functions:

- (1) Opens a contact to stop the transmitter.
- (2) Closes the tape-out contact.
- (3) Frees the feed wheel to aid in the insertion or removal of tape.

2.05 The hinged tape lid with which the transmitter is equipped permits the use of perforated or chadless tape without readjustment.

B. Message Numbering Transmitter (MFD)

2.06 In message numbering, the numbering transmitter automatically inserts the codes for successive numbers into the line to identify each message before it is transmitted. This feature is obtained in two ways, one by using the MXD units arranged to handle tape which has the number codes perforated in it, and the other by MFD units which have no tape-handling facilities, the coding of the numbers in

this case being controlled by external relay equipment. On MXD units, the tape is carried on reels attached to the base and wound on re-wind reels on top of the assembly.

2.07 The MXD numbering transmitter is like the message transmitter except that it is equipped with a letters-sensing mechanism which makes it responsive to the LTRS combination in the number tape. During every operating cycle of the MXD units when the selector-lever pins are sensing the code combination in the tape, a letters-operating lever senses the ends of the five selector levers. If one or more selector levers are in the spacing position, the letters-operating lever is prevented from continuing its travel; but if the code combination is LTRS, the letters-operating lever is permitted to rotate through a larger angle and an extension of the letters-operating lever engages the tape-out contact lever (or sixth pin) and opens the tape-out contacts. The momentary opening of these contacts causes the numbering transmitter to stop and starts one of the message transmitters by means of an external electrical control circuit.

3. MULTIPLE TRANSMITTER BASE (MXB)

3.01 The multiple transmitter base is arranged to mount three transmitter units across

the front of the base and a motor unit behind the transmitter unit on the right side. Either the MFD or MXD transmitter units may be placed in any of the three positions on the base with one exception; if a single MXD unit is used for numbering it should be in the left-hand position because the tape-handling mechanism is there. Motor power is transmitted to each of the units through a cross shaft.

3.02 Since the units are driven from a common cross shaft they necessarily operate at the same speed. To change the speed the motor pinion and its mating gear on the cross shaft have to be changed. An ON and OFF switch is provided on the front of the base.

3.03 Removable coverplates are used to enclose the transmitter units and the motor. A guard is provided on the cover in front of the numbering transmitter through which the number tape passes to protect the tape from damage from external sources. A tape chute is provided to direct the used tape from the right-hand message transmitter through the transmitter base.